Maneuver Land Impacts and Planning

USARAK Range Maneuver Land Plan

Range Maneuver Land Plan Purpose

- To provide a quantitative analysis of the impacts of military maneuver training (current and proposed) for the USARAK Transformation EIS.
- To provide a quantitative analysis on the capability of military lands in Alaska to support future planning efforts for the USARAK Range Maneuver Land Plan (input into RTLP).

Maneuver Land Plan Objectives

- To determine the capability of army lands in Alaska to support military maneuver vehicles.
- To calculate the impacts of the current/proposed units on army lands in Alaska.
- To compare the impacts of the current/proposed unit vs the capability of lands to support military maneuver.
- To provide for planning, project development, project siting, and project design based on land capability and maneuver impacts.

Range Maneuver Land Plan Outline

- Land Capability Analysis
- Impact Analysis
- Planning Boundaries
- Planning Objectives for Each Land Use Type
- Develop Projects to Meet Objectives
- Training Area Redesign

Land Capability

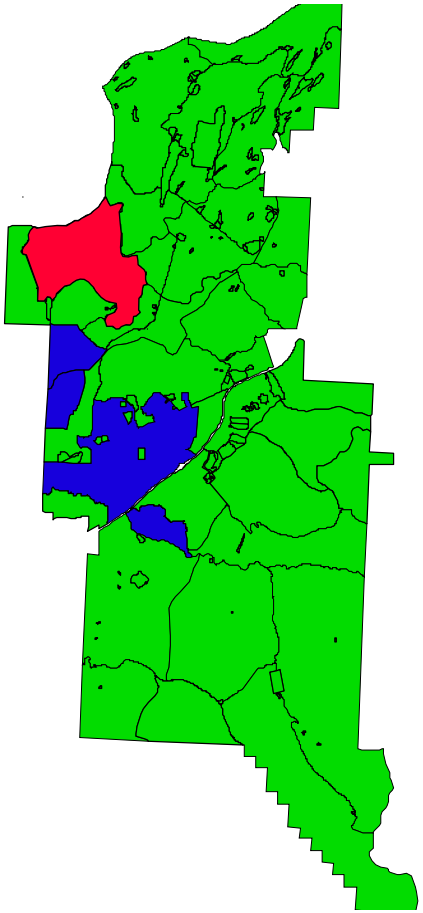
Land Capability Objectives

- Develop new trafficability and maneuverability maps for all three posts in Alaska for the following vehicles: IAV (Stryker), SUSV, HUMMV, HEMMT, etc. using the NATO Mobility Model and USARAK GIS data.
- Determine how many acres are “go”, “slow go”, and “no go” for maneuverability across all three posts in summer and winter.

Land Capability Analysis

- Delineate cantonment/urban areas
- Delineate dudded impact areas
- Delineate permanent firing ranges/complex
- Remainder = maneuver lands
- Calculate lands available for maneuver (maneuver lands limited/restricted/off-limits for environmental/safety/other)
- Calculate available/trafficable land (what lands are trafficable within available land
- Calculate available/trafficable/maneuverable land (what trafficable lands are accessible)

FRA Total Maneuver Land



FRA Total Acreage: 62,192 ac

Cantonment/Urban: 4,860 ac

Dudded Impact Areas: 2,644 ac

Total Maneuver Training Land: 54,688 ac

Trafficability vs Maneuverability

- Trafficability defined as the ability of soils to physically support military vehicles
- Maneuverability includes accessibility due to natural or man-made obstacles (i.e. Tanana River, trees, Alaska Pipeline, Glenn Highway)
- Mobility includes road and off road movement

USARAK LAV Impact Study

LAV Trafficability Criteria

Go
0-5% Slope
Upland Soils
No Permafrost

No Go
>30% Slope
Saturated Wetland Soils
Permafrost

Slow Go
5-30% Slope
Lowland Wet Soils
Discontinuous Permafrost

DTA Trafficability

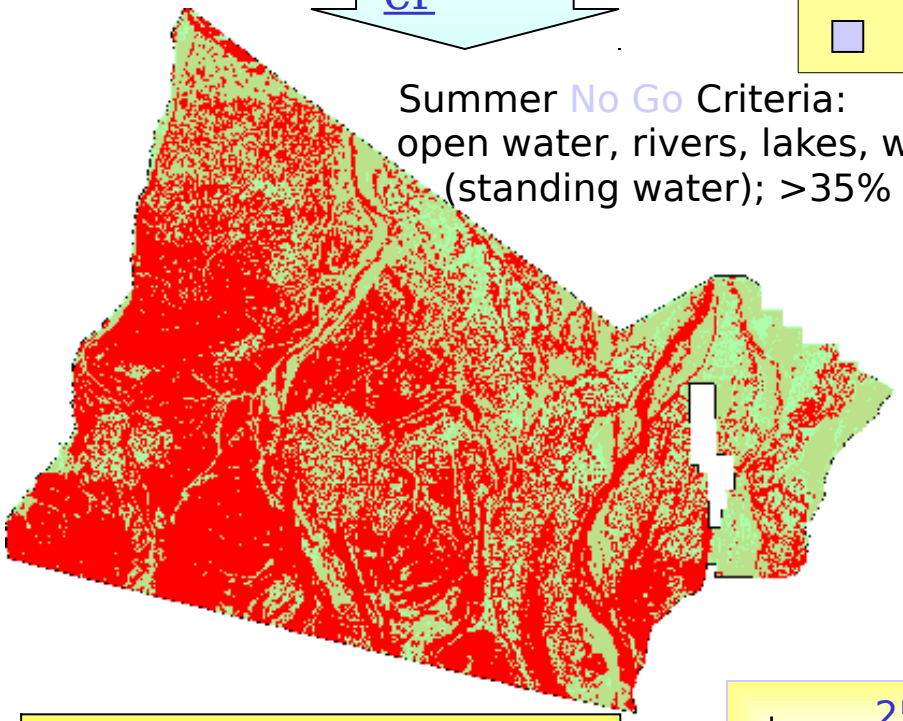
GO

SLOW-GO

NO-GO

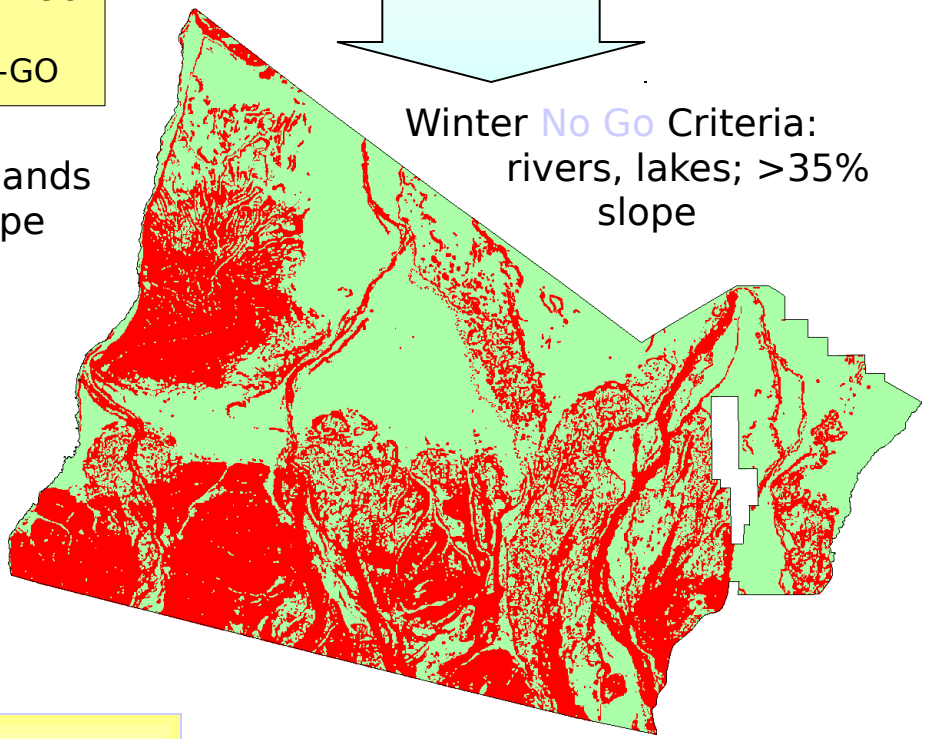
Summer

Summer No Go Criteria:
open water, rivers, lakes, wetlands (standing water); >35% slope



Winter

Winter No Go Criteria:
rivers, lakes; >35% slope

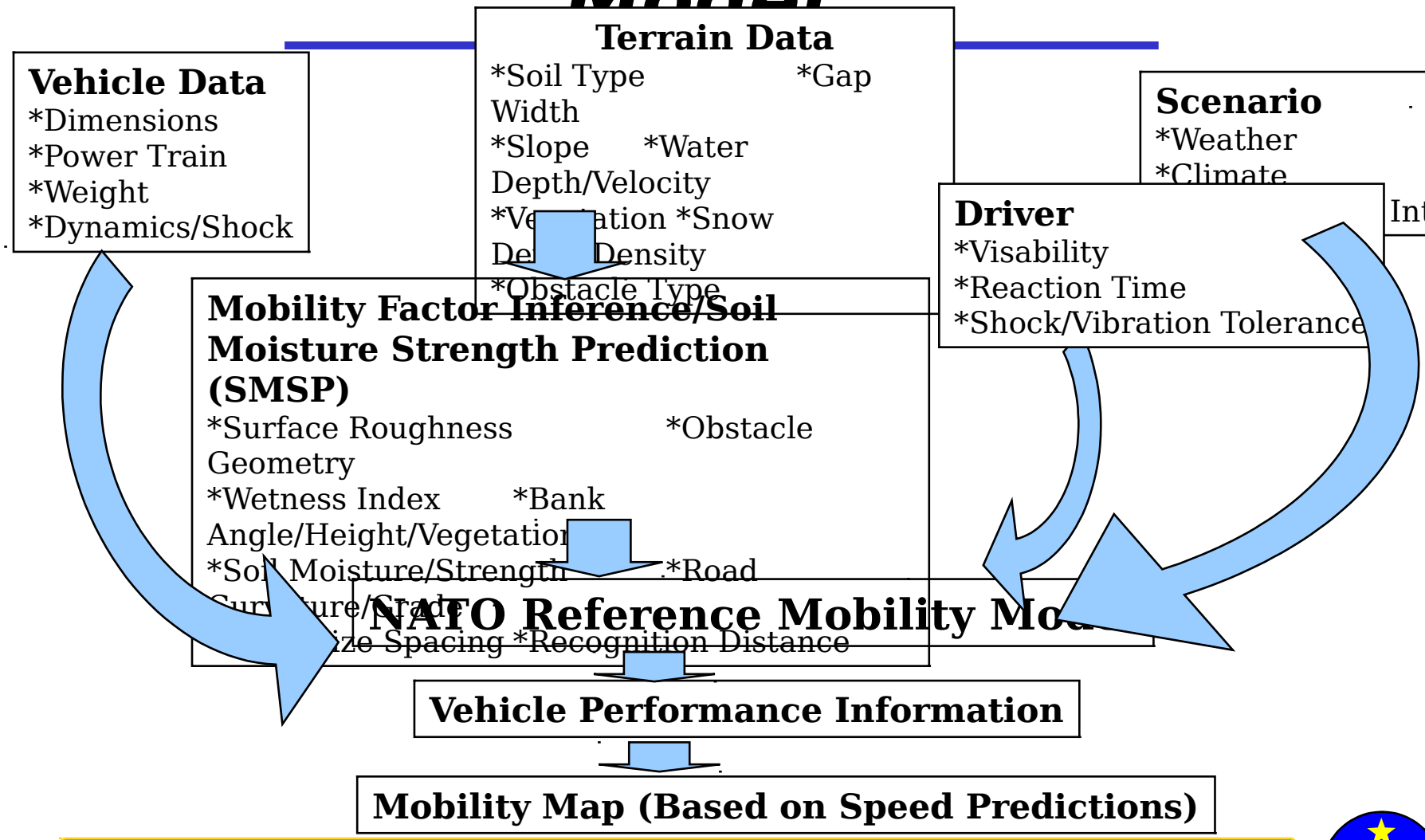


25 km
(~15.5 miles)

Trafficable Maneuver Land
Summer: 327,629 ac

Trafficable Land Winter:
475,000 ac

NATO Reference Mobility Model



FWA Maneuverability

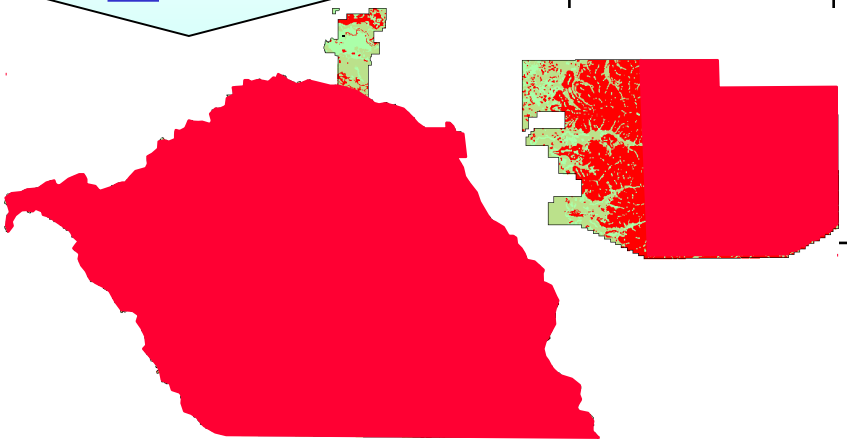
GO (>30 mph)
SLOW-GO (1-30 mph)
NO-GO (0 mph)

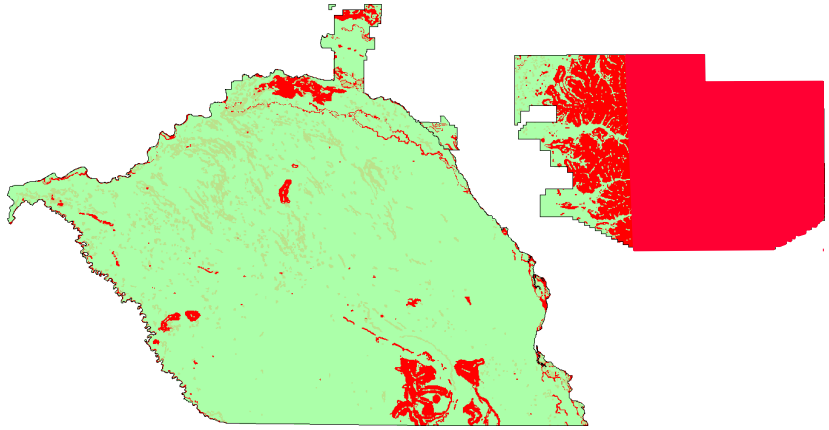
Winter No Go Criteria:
rivers, lakes; >30% slope

Winter

50 km
(~32 miles)

Summer





Maneuverable Land Winter:
580,000 ac

Maneuverable Land Summer:
85,000 ac

Summer No Go Criteria:
open water, rivers, lakes, wetlands (standing water); >30% slope

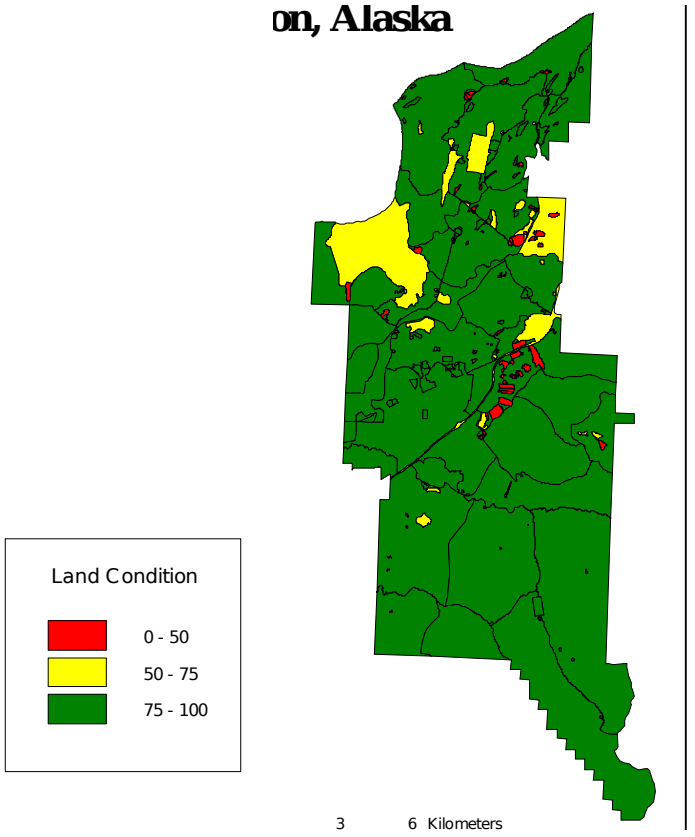
Quantify Impacts

Calculate the impacts of 172nd SIB on army lands in Alaska.

- Calculate current land condition of all three posts in Alaska using LCTA data across the landscape.
- Calculate the current MIMs for the 172nd Separate Infantry Brigade on all three posts for summer (upland and wetland) and winter based on data from RFMSS
- Develop land condition curves based on current unit structure (MIMs vs land condition) for summer and winter.

Current Land Condition

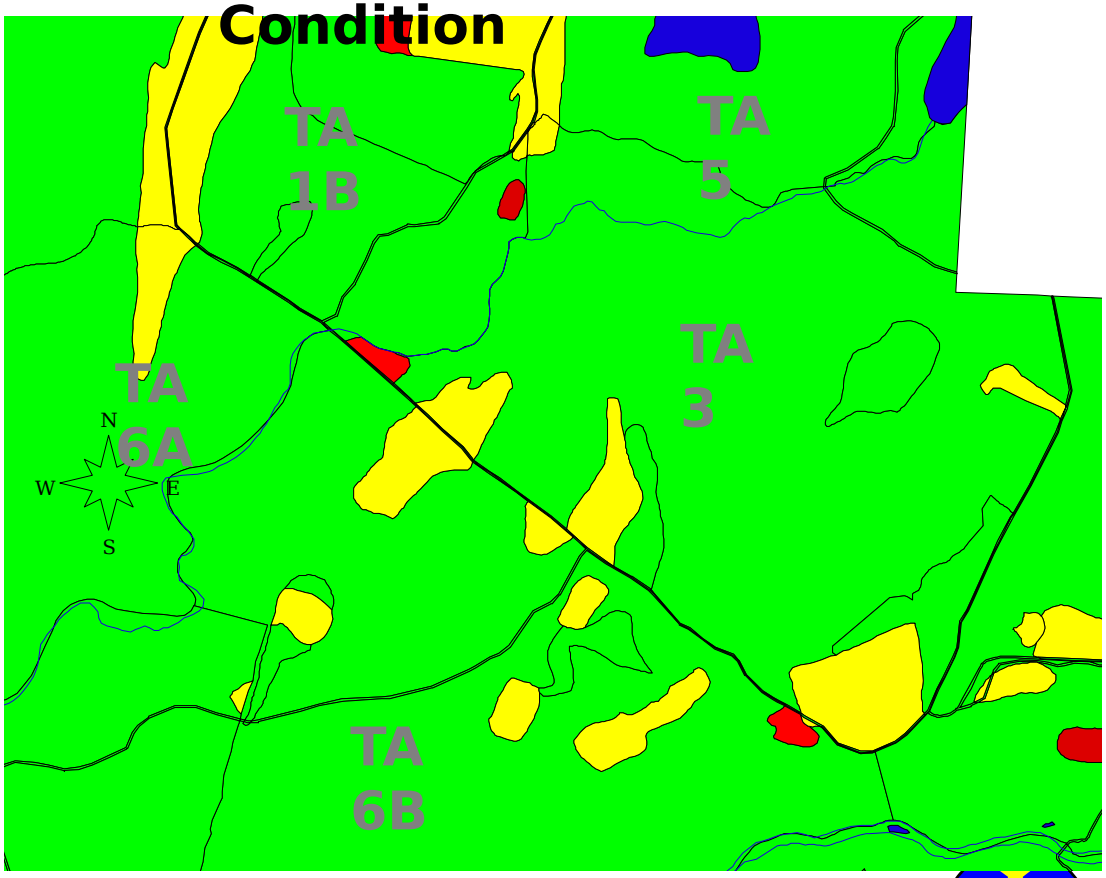
- 99% average Land Condition of all USARAK lands
- 95% average land condition of USARAK maneuverable lands
- 89% average land condition of lands impacted by maneuver training



Current Land Condition

- 13,872 acres impacted by maneuver training (areas outlined in black)
- 8,748 good condition
- 3,600 degraded acres
- 1,524 badly degraded acres

Land Condition



Evidence of Impacts

Good Condition

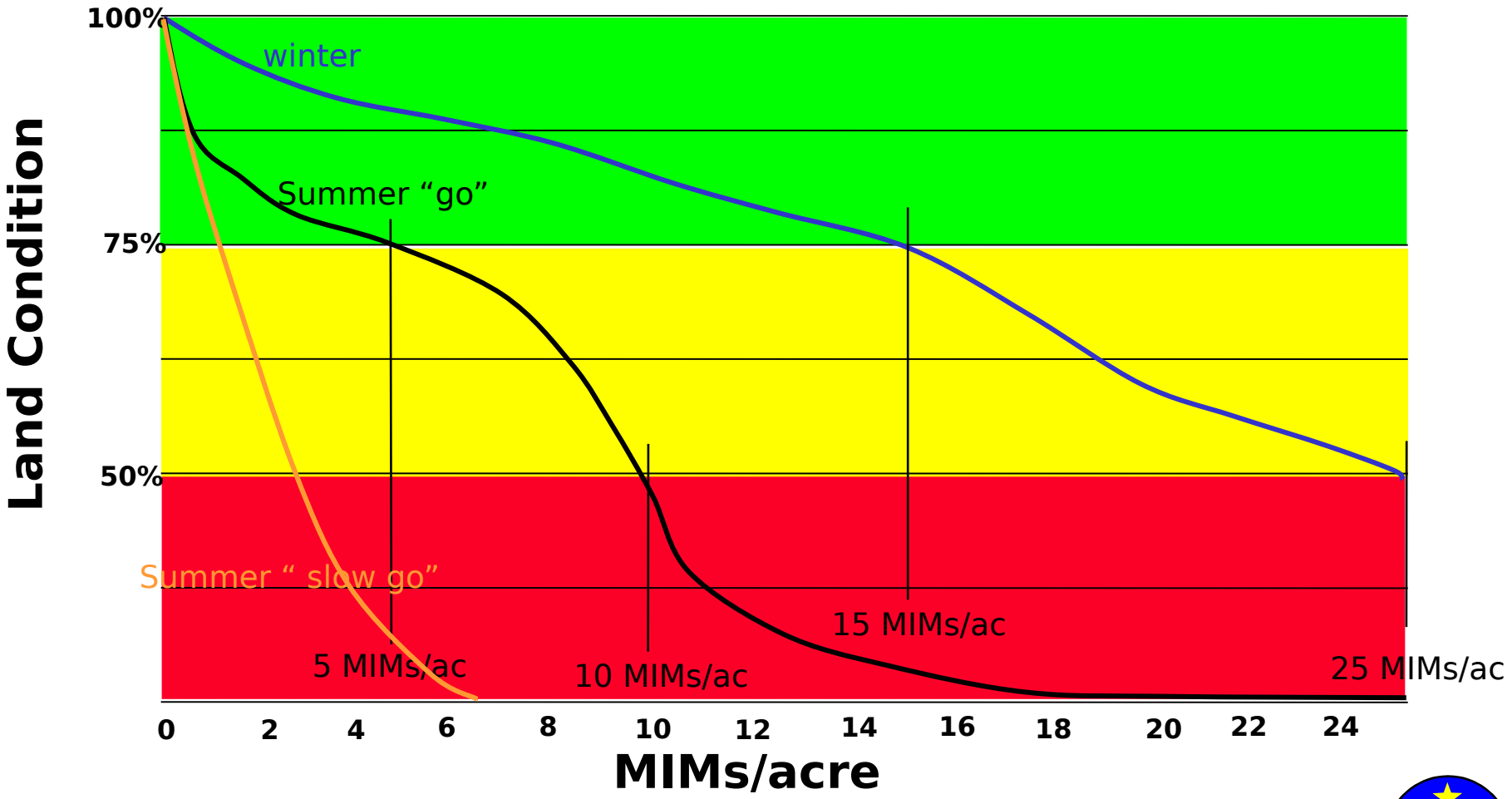
Degraded

Badly Degraded

Current MIMs

- 31600 MIMs for 172nd Bde and USARAK
- DTA-17,900 mims
  - 8950 MIMS winter
  - 8950 MIMs summer
- FWA – 8600 mims
  - 2300 MIMs winter
  - 2300 MIMs summer
- FRA – 5100 MIMs
  - 2550 MIMs frozen
  - 2550 MIMs unfrozen

Land Condition Curves



Integrated Training Area Management (ITAM)

Warriors

America’s Arctic

Baseline

- 242,000 acres summer maneuverable (100,000 “go” + 142,000 “slow go”), 1,410,000 acres winter maneuverable (1,000,000 “go” + 410,000 “slow go”)
- Thresholds\Capacity Current:
  - Summer - 5 MIMs per acre to yellow (1.21M MIMs), 10 MIMs per acre to red (2.42M MIMs)
  - Winter – 15 MIMs/acre to yellow (21.15M MIMs), 25 MIMs/acre to red (35.25M MIMs)
- 31,600 MIMs for 172nd Bde and USARAK currently spread out over 13,872 acres, a rate of 2.28 MIMs per acre, result in 89% land condition

Estimate impacts of proposed IBCT and USARAK on lands in Alaska.

- 158,200 MIMs for IBCT and USARAK
- DTA-95,700 MIMs
  - 47,850 MIMS frozen
  - 47,850 MIMs unfrozen
- FWA – 55,400 MIMs
  - 27,700 MIMs frozen
  - 27,700 MIMs unfrozen
- FRA – 7100 MIMs
  - 3,550 MIMs frozen
  - 3,550 MIMs unfrozen

Compare Impacts vs.Land Capability

- Relate MIMs to acres to estimate the impacts on land condition across the landscape on all three posts during summer and winter.
- Compare acres required/impacted to “go” and “slow go” acres on each post during summer and winter to determine significance of impacts.

Impacts vs. Capability (MIMS)

- Carrying Capacity MIMs:
  - 1,210,000 MIMs summer
  - 21,150,000 MIMs winter
- Current 172nd and USARAK M
  - 15,800 frozen
  - 15,800 unfrozen
- Proposed IBCT and USARAK MIMs
  - 79,100 MIMs frozen
  - 79,100 MIMs unfrozen

Impacts vs. Capability (acres)

- Carrying Capacity Acres:
  - 242,000 acres summer (100,000/142,000)
  - 1,410,000 acres winter(1,000,000/410,000)
- Current 172nd and USARAK Acres
  - 13,872 Acres Impacted, 2.28 MIMs/ac
- Proposed IBCT and USARAK acres @ current rate of 2.28 MIMs/ac
  - 180,384 acres impacted summer (80,384 "slow go" acres required – significant impact)
  - 180,384 acres impacted winter

Impacts vs. Capability (MIMs/acre)

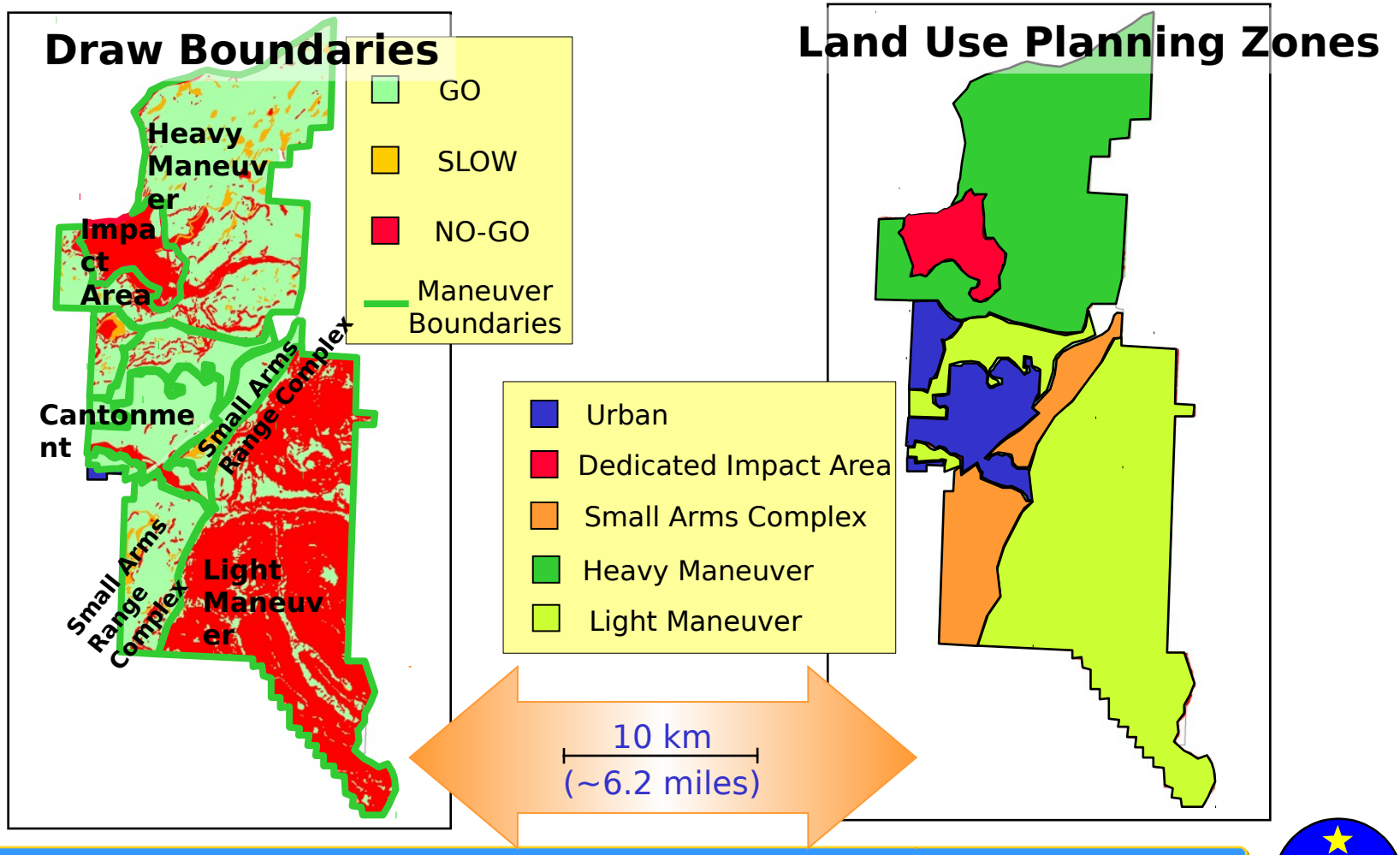
- Thresholds\Capacity IBCT:
  - Summer - 4 MIMs per acre to yellow (0.968M MIMs), 8 MIMs per acre to red (1.936M MIMs)
  - Winter – 12 MIMs/acre to yellow (16.92M MIMs), 20 MIMs/acre to red (28.2M MIMs)
- Proposed IBCT and USARAK impacts spread out over all possible acres
  - 0.25 MIMs/acre summer (not significant impacts)
  - 0.16 MIMs/acre winter (not significant impacts)
- Proposed IBCT and USARAK impacts spread out over currently used acres
  - 4.32 MIMs/acre summer (increase - significant impact)
  - 8.65 MIMs/acre winter (increase-no significant impact)

Planning Boundaries

Draw Maneuver Boundaries

- Medium/heavy maneuver areas
  - delineate areas that have significant maneuverable acres to support all season medium/heavy force maneuvers/impacts
  - delineate areas that minimize impact on wetlands/cultural resources
- Light maneuver areas
  - delineate areas that have less than 25% all season maneuverable acres that can support light summer training and medium/heavy winter training.
- Range complexes
  - delineate areas that have permanent firing range facilities grouped or having shared facilities

Maneuver Boundaries



Planning Objectives

Medium/Heavy Maneuver Objectives

- Improve access:
  - construct / upgrade permanent bridges
  - develop/upgrade stream crossings and approaches to fording sites
  - develop/upgrade access roads into firing ranges, firing points, drop zones, etc.
  - develop / upgrade assault landing strips
- Increase availability:
  - harden selected bivouacs, firing points
  - reconfigure training areas to maximize use of available terrain

Medium/Heavy Maneuver Objectives

- Enhance maneuverability:
  - develop maneuver corridors around maneuver road network
  - develop maneuver corridors between maneuver ranges, airstrips, and drop zones
  - harden heavily used areas and choke points
  - reduce timber vegetation stocking
- Enhance mobility:
  - develop/upgrade maneuver road network to handle all season traffic
  - develop/upgrade maneuver trails to handle dry season and frozen season traffic
  - close/rehabilitate maneuver trails that are not needed/ lead to sensitive wetlands

Light Maneuver Objectives

- Improve access:
  - construct upgrade permanent bridges
  - develop/upgrade stream crossings and approaches to fording sites
  - develop/upgrade access roads into firing ranges, firing points, drop zones, etc.
- Increase availability:
  - harden selected bivouacs, firing points
  - reconfigure training areas to maximize use of available terrain

Light Maneuver Objectives

- Enhance mobility:
  - develop/upgrade maneuver road network to handle all season traffic
  - develop/upgrade maneuver trails to handle frozen season traffic
  - close/rehabilitate maneuver trails that are not needed/ lead to sensitive wetlands
- Enhance maneuverability:
  - harden heavily used areas and choke points

Develop Projects to Meet Objectives

Develop Projects to Meet Objectives

ITAM (IWAM)

Objectives:

- Develop Maneuver Corridors
- Harden Bivouacs, Choke Points, Stream Crossings

03-IBCT-01 Arctic Warrior Maneuver Corridor

Roads and Grounds Maintenance

Objectives:

- Maintain existing facilities

WO# VNC020002J Biannual Route Bravo Maintenance

Natural Resources (INRMP)

Objectives:

- Erosion Control
- Reduce Timber Stocking

EPR# FWA9800016 Erosion Control
EPR# FRA9700002 Erosion Control
EPR# FRA9800008 Forest Management
EPR# FWA9800027 Forest Management

MILCON

Objectives:

- Major Construction of New Roads / Facilities

YTA Infrastructure Upgrade

Meeting Objectives

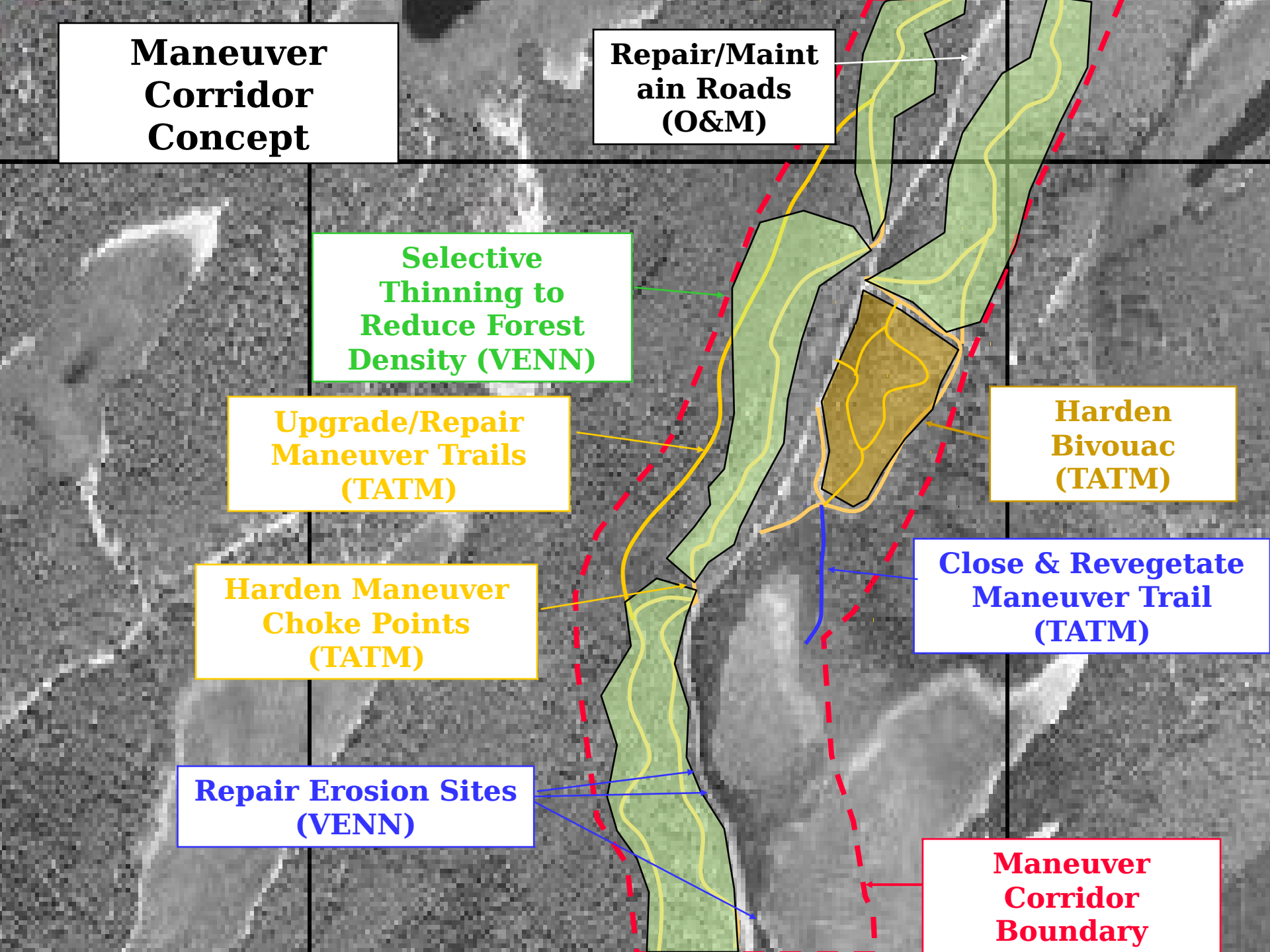
Maneuver corridors will increase maneuverability, mobility, access and availability of range facilities by:

- Developing/upgrading maneuver road network to handle all season traffic (MILCON, O&M)
- Upgrading maneuver trails to handle dry season and frozen season traffic (TATM)
- Closing/rehabilitating maneuver trails that are not needed/ lead to sensitive wetlands (TATM)
- Hardening heavily used areas and choke points (TATM)
- Reducing timber vegetation stocking (VENN)
- Hardening selected bivouacs, firing points (TATM)
- Repairing erosion (VENN) and revegetating damaged areas (TATM)

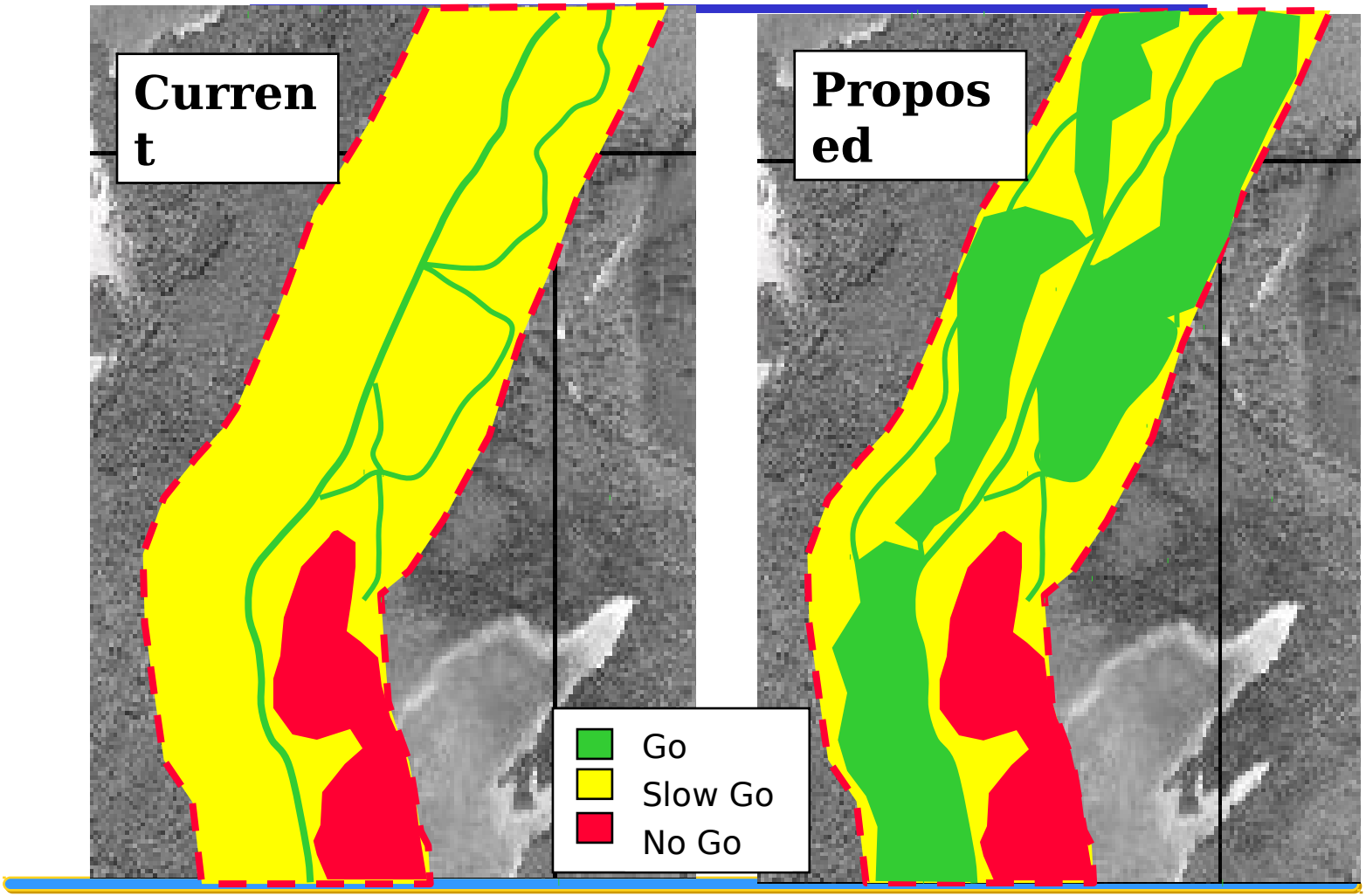
Training Area Redesign

Maneuver Corridor Description

- USARAK maneuver corridors are approximately 600 meters wide (300 meters centered along existing selected range roads - excluding wetlands)
- Most portions of maneuver corridors are trafficable, but maneuverability is limited by existing vegetation
- Creating maneuver corridors will help to reconfigure training areas to maximize use of available terrain
- Maneuver corridors will link drop zones and airstrips with maneuver firing ranges


Maneuver Corridor Concept
Repair/Maintain Roads (O&M)
Selective Thinning to Reduce Forest Density (VENN)
Upgrade/Repair Maneuver Trails (TATM)
Harden Bivouac (TATM)
Harden Maneuver Choke Points (TATM)
Close & Revegetate Maneuver Trail (TATM)
Repair Erosion Sites (VENN)
Maneuver Corridor Boundary

Increase Maneuverability



Harden Bivouacs

Summary

- Range Maneuver Land Plan incorporates capability analysis and current impacts to develop maneuver land planning
- Range Maneuver Land Planing helps focus resources into areas that will provide the greatest return on investment
- Range Maneuver Land Planning provides significant input into RTLP, Installation Master Plan and Transformation EIS